

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU03/00748

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: G01N 23/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
DWPI, JAPIO IPC G01N 23/IC with KEYWORDS : (monochromat+ or ((one or single) (w) (waveglenth or frequency)) or ((silicon or Si) (w) crystal))

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5987095 A (CHAPMAN et al.) 16 November 1999 Abstract; Fig. 1; Col. 4, lines 32 - col. 5, lines 61	1,2,5-7,11,12, 15-17,39,40
X	US 5319694 A.(INGAL et al.) 7 Jun 1994 Abstract; col. 4, lines 7-23; col. 5, lines54-63; Fig. 3	1,2,5-7,11,12, 15-17,39,40
X	WO 01/79823 A (CHAPMAN et al.) 25 October 2001 Abstract; page 6, lines 14-23; page 15, line 20 - page 17, line 9; Fig. 1	1,2,5-7,11,12, 15-17,39,40

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
28 July 2003

Date of mailing of the international search report

05 SEP 2003

Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaustalia.gov.au  
Facsimile No. (02) 6285 3929

Authorized officer

LARS KOCH  
Telephone No : (02) 6283 2551

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/00748

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95/05725 A (COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION) 23 February 1995 Abstract; page 4, line 20 - page 5, line 1; page 6, lines 9-17; page 12, line 23 - page 13, line 4; Figs 1,4	1,2,5-7,11,12,15-17,39,40

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/00748

## Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos :  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos :  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

## Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Supplemental Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-40

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU03/00748

### Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

#### Continuation of Box No: II

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or a group of inventions so linked as to form a single inventive concept. In coming to this conclusion the International Searching Authority has found that there are two inventions:

1. Claims 1-10, 20-29, 39, 40 are directed to a method for analysis of an object comprising the following steps :  
irradiating the object with a beam of monochromatic X-rays,  
diffracting the X-rays emerging from the object,  
obtaining an angular spectrum of the diffracted X-ray intensities.

An apparatus for performing the above method is also claimed in claims 11-19, 30-38.

It is considered that the steps of irradiating the object with a beam of monochromatic X-rays, diffracting the emerging X-rays from the object and obtaining an angular spectrum of diffracted X-ray intensities comprise a first "special technical feature" (for the method claims).

2. Claim 41 is directed to a method of analysis of an object including the steps of :  
collecting generic X-ray diffraction data from a portion of the object,  
analysing the data to obtain a complex refraction index of the sampled portion in a direction transverse to the beam propagation.

It is considered that the steps of collecting generic X-ray diffraction data from a portion of the object and analysing the data to obtain a complex refraction index of a sampled portion comprise a second "special technical feature".

Since the above mentioned group of claims do not share any of the technical features identified, a "technical relationship" between the inventions, as defined in PCT rule 13.2 does not exist. Accordingly the international application does not relate to one invention or to a single inventive concept.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU03/00748

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
US	5987095	WO	9816817		
US	5319694	EP	539608	US	5579363
WO	200179823	AU	200153566	US	2002027970
WO	9505725	AU	74538/94	US	5802137
				US	5850425
END OF ANNEX					